

ACCESSORIES FOR BOATS AND SYSTEMS AND METHODS FOR INSTALLATION AND REMOVAL OF SUCH ACCESSORIES

FIELD OF THE INVENTION

This invention relates to accessories for boats and more particularly (although not exclusively) to accessories for inflatable boats and to systems and methods for installing and removing such accessories rapidly and easily.

BACKGROUND OF THE INVENTION

Purchasers of boats sometimes customize the boats prior to use. Consequently, many boats currently are sold without accessories such as seats, steering mechanisms, and controls. Purchasers then outfit their boats as desired, often adding these accessories as well as, for example, storage compartments, fuel tanks, radios, and lights.

Consoles frequently added to boats often incorporate remote steering mechanisms (i.e. steering wheels) and engine speed and gear controls. These consoles typically contain storage batteries for engine-starting purposes. The batteries may as well power radios, lights, and other electrical equipment.

Consoles of this sort, together with seats, usually are bolted--or otherwise permanently attached--to the decks of their associated boats. Such permanent attachment is logical when the decks are rigid and adapted to receive bolts securely as, for example, when the boats are RIBs (rigid inflatable boats). Likewise, permanent attachment of outboard engines to transoms of RIBs is not

disadvantageous, as these boats are not intended to be dismantled for transport or storage.

U.S. Patent No. 5,131,348 to Roy, hereby incorporated herein in its entirety by this reference, illustrates an exemplary RIB having a console formed into its deck. Included as part of the console are a jockey seat and a block forming a piloting post, both of whose upper portions may be raised or removed to allow access to drive mechanisms underneath the console. Otherwise, however, the console is not intended to be removed; indeed, an advantage of incorporating the console into the deck is to increase the strength of the assembly, particularly when the RIB is piloted at high speeds at sea.

By contrast, permanent attachment of various accessories to certain other inflatable boats is problematic. Folding inflatable boats, for example, are marketed as adapted to be dismantled, deflated, and folded (or rolled) for transport and storage, sometimes in compact bags. These boats often include removable deck sections and use air as their sole means of providing rigidity and buoyancy. Permanently attaching accessories such as consoles, seats, and engines to these boats would inhibit, if not completely thwart, their dismantling and folding.

SUMMARY OF THE INVENTION

The present invention accordingly provides boating accessories that may be installed and removed rapidly and easily. As a result, the accessories may be utilized advantageously in folding inflatable boats, as they need not be permanently connected thereto. These accessories, together with their installation and removal

systems and methods, likewise may be used with other boats (including RIBs). As well some or all of the accessories, systems, and methods of the invention may be used in connection with vehicles other than boats.

Certain embodiments of the present invention contemplate including plates, tracks, D-rings (or eyes), or other receptacles prepositioned and fitted onto a deck. The plates, rings, and receptacles will provide anchor points for accessories and be adapted to receive quick-release hooks or similar devices. When the accessories are installed, the hooks will be received by complementary mechanisms of the plates so as firmly to latch the accessories in position. By contrast, the quick-release action of the hooks permits rapid removal of the accessories when desired. If such rapidity is undesirable (e.g. to minimize possibility of theft of the removable accessories), the hooks may be fitted with a locking system.

Various embodiments of the invention additionally may include a self-contained steering control console. Adapted for connection to an engine via appropriate electrical and mechanical cables, the console also may include a steering wheel and mechanism and incorporate engine gear and throttle levers and an instrument panel. As well, within the console may be included a starting battery. By fitting it with quick-release hooks (or similar devices), the console may be rapidly installed and removed from the deck.

The invention further may include one or more seats likewise adapted for connection to and removal from the deck. In some embodiments the seats are molded and form part of a module also including storage space, a fuel tank, or both.

Alternatively, other types of seats attachable to plates positioned in the deck may be used.

Yet additionally, the invention may comprise a mechanism for mounting an outboard motor in a manner permitting its ready removal from the boat. A quick-release motor bracket intermediate the motor and transom would be acceptable for this purpose. If cables connect the engine to a remote steering device (such as a steering wheel on the console), they too either may be equipped with quick-release devices or, in some cases, simply allowed to remain in position.

It thus is an optional, non-exclusive object of the present invention to provide boats with removable accessories.

It is also an optional, non-exclusive object of the present invention to provide accessories for folding inflatable boats that may be rapidly and easily installed and removed.

It is another optional, non-exclusive object of the present invention to provide systems and methods for such rapid and facile installation of accessories.

It is a further optional, non-exclusive object of the present invention to provide consoles or other components that may be fitted to receptacles within decks of boats.

Other objects, features, and advantages of the present invention will be apparent to those skilled in the relevant field with reference to the remaining text and the drawings of this application.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of an exemplary inflatable boat having a deck consistent with the present invention.

FIGS. 2A-B are perspective views of an exemplary seat structure consistent with the present invention.

FIG. 3 is a perspective view of the boat of FIG. 1 including a console and seat attached to the deck.

FIGS. 4-5 are side elevational views of exemplary fastening mechanisms useful in connection with the present invention.

FIGS. 6A-B are views of an alternate fastening mechanism useful in connection with the present invention.

FIG. 7 is a depiction of an exemplary mechanism for mounting an outbound motor.

DETAILED DESCRIPTION

Illustrated in FIG. 1 is an exemplary boat 10. Boat 10 may (but need not necessarily) be inflatable and comprise one or more buoyancy tubes 14. Also depicted in FIG. 1 is transom 18, to which an outboard motor or other engine may be attached.

Included as part of boat 10 may be deck 22, which as shown in FIG. 1 may be made of multiple sections 26. Deck 22 may be removable, with sections 26 folding upon each other for compactness. With deck 22 (and transom 18) removed, tubes 14 may be deflated and boat 10 rolled, folded, or otherwise decreased in size for

transport or storage. Deck 22 need not be removable, however, nor need it include foldable sections 26.

Formed in or on deck 22 are receptacles 30. Such receptacles 30 may be included in plates positioned within deck 22 or as part of tracks either formed therein or positioned thereon. Alternatively, other types of receptacles may be employed. In particular, receptacles 30 may, if desired, comprise rings (preferably D-rings) bolted or otherwise attached to the plates or directly to deck 22. Such rings, if present, further may be foldable so that rest flat (or almost so) against the plates or deck when not in use. Preferably, however, the presence of receptacles 30 does not impede either removal of deck 22 from boat 10 or folding of sections 26 upon each other (if the deck 22 is removable or has foldable sections 26).

FIGS. 2A-B show an exemplary structure 34 adapted for placement into one of more receptacles 30. Depicted as a seating module, structure 34 may include seat 38 and container 42. In some embodiments of the invention, seat 38 is molded and mounted onto container 42. Those skilled in the art will, however, recognize that structure 34 may consist of components other than seat 38. Likewise, although container 42 may provide storage space for liquids (such as engine fuel) or solid items, it need not do so, nor need it necessarily be present as part of structure 34.

FIG. 2A details structure 34 fitted into receptacles 30 of plate 44 of deck 22. Conventional quick-release hooks 46 and receivers may be employed to accomplish such fitting. Typically, although not necessarily, the quick-release hooks 46 (FIG. 2B) will be included on base 50 of structure 34, while the receivers will be

incorporated into receptacles 30. If desired to latch structure 34 to deck 22 more permanently, a suitable locking mechanism also may be employed.

Illustrated in FIG. 3 is console 54 together with an alternative seat structure 58. Both console 54 and structure 58 may be temporarily connected to deck 22, as described above, using quick-release fasteners or other appropriate devices. Console 54 may include steering wheel 62 and, if desired, engine gear or throttle levers as well. Likewise, console 54 may include optional instrument panels, an engine starting mechanism, and a storage battery. Any necessary cables (whether electrical, mechanical, or otherwise) connecting console 54 to an outboard or other motor may themselves be adapted readily to be disconnected from either or both of console 54 and the motor. Consequently, merely by disconnecting the cables and releasing the fasteners, console 54 may be removed from boat 10.

FIGS. 4-5 show examples of quick-release mechanisms useful in connection with the invention. Such mechanisms are available from Southco, 210 North Brinton Lake Road, Concordville, Pennsylvania, although other mechanisms may be employed instead. In FIG. 4, mechanism 66 includes hook 70 designed to engage keeper 74 when handle 78 is rotated downward (toward keeper 74). Rotating handle 78 upward, by contrast, may release engagement of hook 70 and keeper 74. Either hook 70 or keeper 74 typically would attach to structure 34 or 58, with the other of hook 70 or keeper 74 being connected directly or indirectly to deck 22.

Illustrated in FIG. 5 is an alternative mechanism 82 comprising lever 86 and rod 90. Depressing lever 86 engages hook 94 (present at an end of rod 90) and keeper 98. Raising lever 86 releases hook 94 from keeper 98.

FIGS. 6A-B detail another alternative mechanism 100 for use in connection with the invention. Mechanism 100 may include one or more D-rings 200, each connected to a corresponding plate 204. In use, D-rings 200 receive hooks or other portions of equipment (or connectors) to be attached to deck 22. When not in use, by contrast, D-rings 200 may rest flat against their corresponding plates 204 to minimize their projection above deck 22. Although the D-ring depicted in FIG. 6A is shaped similar to the letter “D,” it may have some other shape instead.

Preferred versions of mechanism 100 may include bottom plates 208, sleeves 212, and bolts 216 (or similar fasteners). Each of bolts 216, adapted to engage both a plate 204 and an associated bottom plate 208, may function to secure the position of a D-ring 200 relative to deck 22. To avoid bolts 216 damaging interior 220 of deck 22, sleeves 212 spanning the interior depth of deck 22 may be used to receive bolts 216 and isolate them from interior 220.

FIG. 7 depicts an outboard motor M being mounted to transom 18. Shown in FIG. 7 is an exemplary mounting assembly 102 permitting ready removal of motor M when necessary or desired. In the illustrated embodiment, assembly 102 comprises plate 106 and receptacle 110, one element connected to motor M and the other to transom 18. Preferably, plate 106 is attached to motor M, and receptacle 110 is attached to transom 18. Similarly preferred is that receptacle 110 include rails, into which edges of plate 106 are fitted, and a terminal stop or other feature designed to prevent further downward movement of plate 106 when the plate 106 is appropriately positioned within receptacle 110. Assembly 102 may also include, if desired, an

indicator informing (audibly, visibly, or otherwise) a user that plate 106 is correctly and completely inserted into receptacle 110.

When assembly 102 is in use, motor M is mounted to transom 18 by sliding plate 106 downward into receptacle 110. Although gravitational forces assist in maintaining plate 106 within receptacle 110, a suitable clamping or latching mechanism may be used as well to secure the position of motor M. Hence, to remove motor M, one need merely disengage the clamping or latching mechanism and lift plate 106 from receptacle 110, providing a quick release of motor M without need for fasteners (e.g. bolts, screws, etc.) to connect the motor to transom 18.

By utilizing accessories, methods, and systems such as those disclosed herein, boat 10 may be outfitted or customized with desirable accessories. If boat 10 is designed to be deflated and folded or rolled for transport or storage, the removable nature of the accessories permits removal of deck 22 and facilitates compacting boat 10. Thus, although the foregoing is provided for purposes of illustrating, explaining, and describing exemplary embodiments and certain benefits of the present invention, modifications and adaptations to the illustrated and described embodiments will be apparent to those skilled in the relevant art and may be made without departing from the scope or spirit of the invention.